

Serial No.: 10/025,983
Atty. Docket No.: P67385US0

IN THE CLAIMS:

Please amend the claims as follows:

Claims 1-3. (Canceled).

4. (Currently Amended) A method for determining ion concentration of blood of a patient in citrate anti-coagulated haemo-dialysis and/or haemo-filtration using a dialysate, comprising the steps of:

adding citrate to the blood circulation during citrate anti-coagulated haemo-dialysis and/or haemo-filtration;

temporarily interrupting the adding of citrate to the blood circulation to prevent complexing of a relevant ion with the citrate before measuring a concentration of said ion in the dialysate;

measuring the concentration of said ion in the dialysate;

and

determining the ion concentration of the blood on the basis of ~~a determination~~ said measurement of the ion concentration in the dialysate, ~~and preventing the complexing of a relevant ion with citrate before the determination of the ion concentration in the dialysate for the purpose of determining the ion concentration.~~

Serial No.: 10/025,983
Atty. Docket No.: P67385US0

5. (Canceled).

6. (Canceled).

7. (Currently Amended) The method in accordance with claim 5 4, wherein the measurement of the ion concentration in the dialysate is carried out after interrupting the citrate addition at the end of a length of time which is composed of a dead time caused by dead volumes and of a period of time required to reach a quasi-stationary state.

8. (Currently Amended) The method in accordance with claim 5 4, wherein the measurement of the ion concentration in the dialysate is carried out multiple times after interrupting the citrate addition and ~~the~~ a measured value of said ion concentration is determined after reaching a quasi-stationary state.

9. (Currently Amended) The method in accordance with claim 5 4, wherein the measurement of the ion concentration is repeated multiple times after interrupting the citrate addition and ~~the~~ a measured value of said ion concentration is determined by extrapolation of the ion concentrations obtained in the dialysate.

Serial No.: 10/025,983
Atty. Docket No.: P67385US0

10. (Currently Amended) The method in accordance with claim 5 4, wherein the citrate concentration is interrupted for a pre-determined time interval and ~~the~~ a measured value of said ion concentration is determined by integration of an area of a response function defined by the ion concentration in the dialysate as a function of time.

11. (Canceled).

12. (Canceled).

13. (Previously Presented) The method in accordance with claim 4, wherein the dialysate flow is reduced for the purpose of approximating the ion concentration of the dialysate to the ion concentration of the blood.

14. (Previously Presented) The method in accordance with claim 4, wherein the determination of the ion concentration of the blood takes place by calculation without reducing the dialysate flow.

Serial No.: 10/025,983
Atty. Docket No.: P67385US0

15. (Previously Presented) The method in accordance with claim 4, wherein the detection of the ion concentration in the dialysate takes place by means of an ion-sensitive sensor in the dialysate flowing away from the dialyser.

16. (Previously Presented) The method in accordance with claim 4, wherein the determined ion concentration of the blood of a patient serves as a controlled variable whose value is influenced by control variables of citrate addition and/or addition of a substitution medium containing ions.

17. (Previously Presented) The method in accordance with claim 4, wherein an alarm is triggered when the determined ion concentration in the blood of the patient lies outside a permitted range or differs from a permitted value.

18. (Previously Presented) The method in accordance with claim 4, wherein the ion concentration in a compartment of the dialyser on the blood side thereof is determined without interrupting the citrate supply and is compared with a permitted threshold value of the ion concentration, with citrate feed being changed in dependence on this comparison.

Serial No.: 10/025,983
Atty. Docket No.: P67385US0

19. (Currently Amended) The method in accordance with claim 4, wherein the ~~ions are~~ ion includes calcium ions.

Claims 20-31 (Canceled).

32. (Currently Amended) The method in accordance with claim 4, wherein the ~~ions are~~ ion includes magnesium ions.

33. (Currently Amended) The method in accordance with claim 4, wherein the ~~ions are~~ ion includes magnesium ions and calcium ions.

34. (New) A method for determining ion concentration of blood of a patient in citrate anti-coagulated haemo-dialysis and/or haemo-filtration using a dialysate, comprising the steps of:

adding citrate to the blood circulation during a citrate anti-coagulated haemo-dialysis and/or haemo-filtration process, said citrate forming a complex with an ion;

lowering a pH of said dialysate to release said ion from said citrate complex before determining a concentration of said ion in the dialysate; and

Serial No.: 10/025,983
Atty. Docket No.: P67385US0

determining the ion concentration of the blood on the basis of the determination of the ion concentration in the dialysate.

35. (New) The method in accordance with claim 34, wherein the pH is set to a range of $\text{pH} = 2-3$.

36. (New) The method in accordance with claim 34, wherein the setting of the pH in the dialysate takes place by means of an infusion of acid.